

159569

Wednesday, April 12, 2017 4:37:51 PM

N900040100

Setup Start *NS1*

Stop *NS2*

40

Cust Item ID:

Start Date: 4/19/2017 **Start Qty:** 40.00

Required Date: 5/29/2017 **Req'd Qty:** 40.00

40

Customer:

Reference: SCHEDULED/S

Approvals: Process Plan: 21 Date: APR 13 2017

Tooling:

Date:

Run Start *NR1*

QC:

Date: _____ **SPC (Y/N):** _____

Date:

Stop *NR2*

[illegible]

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER : _____							

Work Order ID 159569

Wednesday, April 12, 2017 4:37:51 PM

159569

Page 2

Item ID: D3278-1 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Support
 Start Date: 4/19/2017 Start Qty: 40.00 ***40*** Cust Item ID:
 Required Date: 5/29/2017 Req'd Qty: 40.00 ***40*** Customer:
 Reference: SCHEDULED/S

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.80				40	0		DAS 49 9-89 17/04/24
140 *140* HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 Memo	0.00 0.69				(x40)	0		201704/25 BEB.
150 *150* Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum M 136657. Memo START TIME: 8:20 FINISH TIME: 8:50	0.00 0.49				40	0	1704-27	DAS 34 9-89

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐		
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐		
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐		
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐		
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐		
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐		
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐		
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐		
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐		
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐		
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____					
Misidentified ☐	Past Due ☐						

Work Order ID 159569

Wednesday, April 12, 2017 4:37:51 PM

159569

Page 3

Item ID: D3278-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Support
Start Date: 4/19/2017 Start Qty: 40.00 ***40*** Cust Item ID:
Required Date: 5/29/2017 Req'd Qty: 40.00 ***40*** Customer:
Reference: SCHEDULED/S

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	QC3- Inspect Part Finish	0.00							
160						40			DAS 38 9-89
QC	Memo	0.40							APR 27 2017
Quality Control									
170	Identify as per dwg & Stock Location: _____	0.00							
170						40			DAS 6 9-89
Packaging	Memo	0.40							APR 28 2017
Packaging	LOCATION : GA								
180	QC21- Final Inspection - Work Order Release	0.00							
180									17/5/1
QC	Memo	4.00							
Quality Control									

DAS
21
9-89 MAY 01 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. COOR. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
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Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

Picklist Print

Wednesday, April 12, 2017 4:37:50 PM

Page 1

Work Order ID: 159569

159569

Parent Item: D3278-1

D3278-1

Parent Item Name: Support

Start Date: 4/19/2017

Required Date: 5/29/2017

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP: A04.04.19New issueKJ/JLM
IPP B 07.09.06 rev.c dwg EC verified by: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B1.000X02.00 0		Purchased			No	100	f	23.8666	0.2337	9.84			

M6061T6B1 000X02 000

6061-T6 Bar 1.00 x 2.00

D.A 17-04-22

Location	Loc Qty	Loc Code
MAT	12.2666	
M136200	0.2666	
M136882	12	
MAT003	11.6	
→ M137175	11.6	

8.923

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

DART AEROSPACE LTD		Work Order: 159569
Description: Support		Part Number: D3278-1
Inspection Dwg: D3278 Rev: C		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ **First Article**

 ☐ **Prototype**

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.098	+0.005/-0.000	0.099	✓		Vern	GA-B
0.359	+/-0.005	0.361	✓		H-6	31006
0.609	+/-0.010	0.611	✓		Vern	GA-B
0.250	+/-0.010	0.251	✓		"	"
1.480	+/-0.005	1.480	✓		"	"
R0.125	+/-0.010	R0.125	✓		R-6	ref.
0.119	+0.005/-0.004	0.117	✓		Mic	GA-03
2.439	+/-0.010	2.442	✓		Vern	GA-B
1.980	+/-0.010	1.981	✓		"	"
R0.13	+/-0.030	R0.125	✓		R-6	ref.
Ø0.257	+0.005/-0.000	Ø0.258	✓		Vern	GA-B
R0.375	+/-0.010	R0.375	✓		R-6	ref.
0.875	+/-0.010	0.875	✓		Vern	GA-B
0.500	+/-0.010	0.502	✓		H-6	31006
R0.400	+/-0.010	R0.400	✓		R-6	ref.
R1.00	+/-0.030	R1.000	✓		"	"
1.720	+/-0.010	1.722	✓		Vern	GA-B
R0.125	+/-0.010	R0.125	✓		R-6	ref.
0.125	+/-0.010	0.128	✓		Mic	GA-03

Measured by: <u>Da</u> DAS 08	Audited by: <u>49</u> DAS 9-89	Prototype Approval:	N/A
Date: 17-04-22 08-99	Date: 17/05/24	Date:	N/A

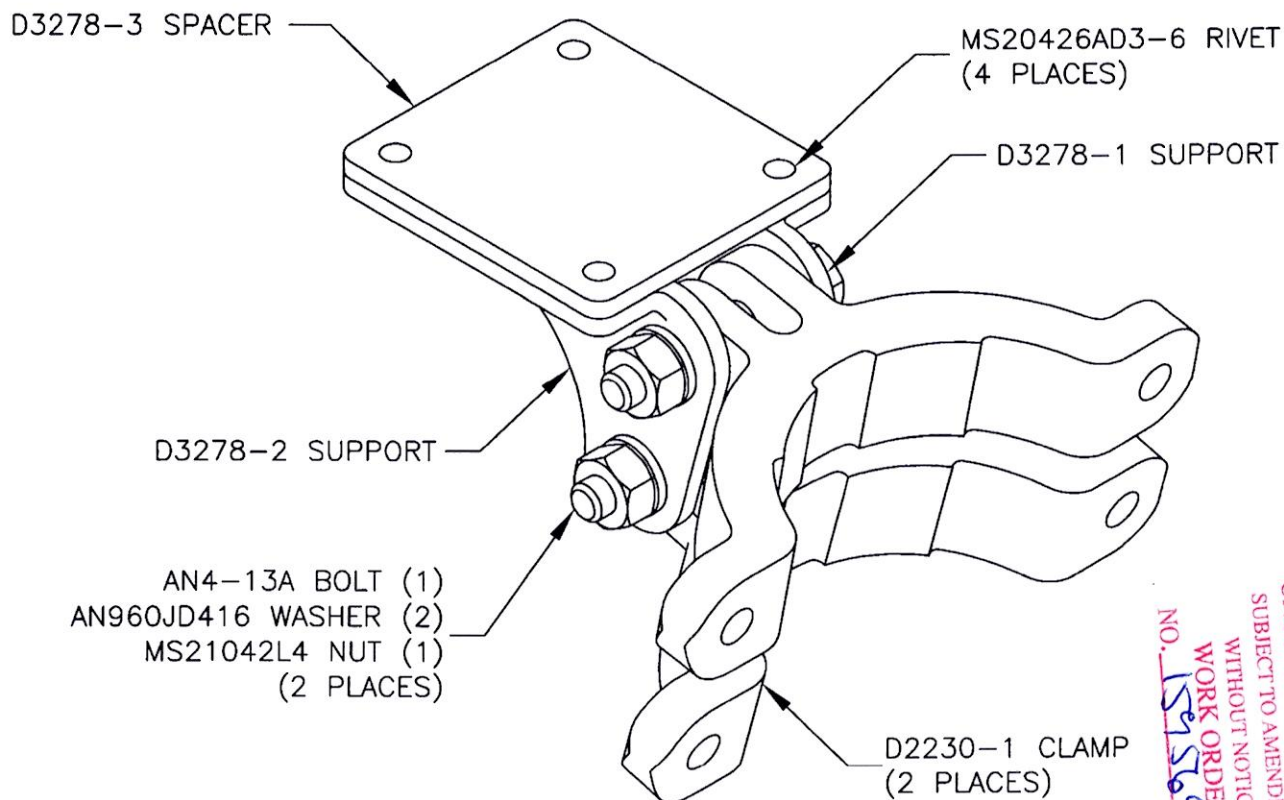
Rev	Date	Change	Revised by	Approved
A	04.04.19	New Issue P/O D3278-041	KJ/JLM	
B	05.06.08	0.359 was 0.365; 0.119 was 0.125	KJ/JLM	
C	07.09.26	Dimensions updated per Dwg Rev. C	KJ/EC <i>[Signature]</i>	<i>[Signature]</i>



DESIGN <i>97</i>	DRAWN BY <i>SC</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>13</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3278	REV. C SHEET 1 OF 3
DATE 07.07.24		TITLE SUPPORT ASSEMBLY	SCALE NTS
A	04.03.03	NEW ISSUE	
B	05.03.31	CHANGE DIM/TOL TO ENSURE FIT	
C	07.07.24	CHANGED RIVETS PER PAR #185	

RELEASED
07 08-18

D3278-041 SUPPORT ASSEMBLY



Qty	Part Number	Description
X	D3278-041	SUPPORT ASSEMBLY
2	D2230-1	CLAMP
1	D3278-1	SUPPORT
1	D3278-2	SUPPORT
1	D3278-3	SPACER
2	AN4-13A	BOLT
4	AN960JD416	WASHER
4	MS20426AD3-6	RIVET
2	MS21042L4	NUT

SHOP COPY
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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. *159569*
1704-13

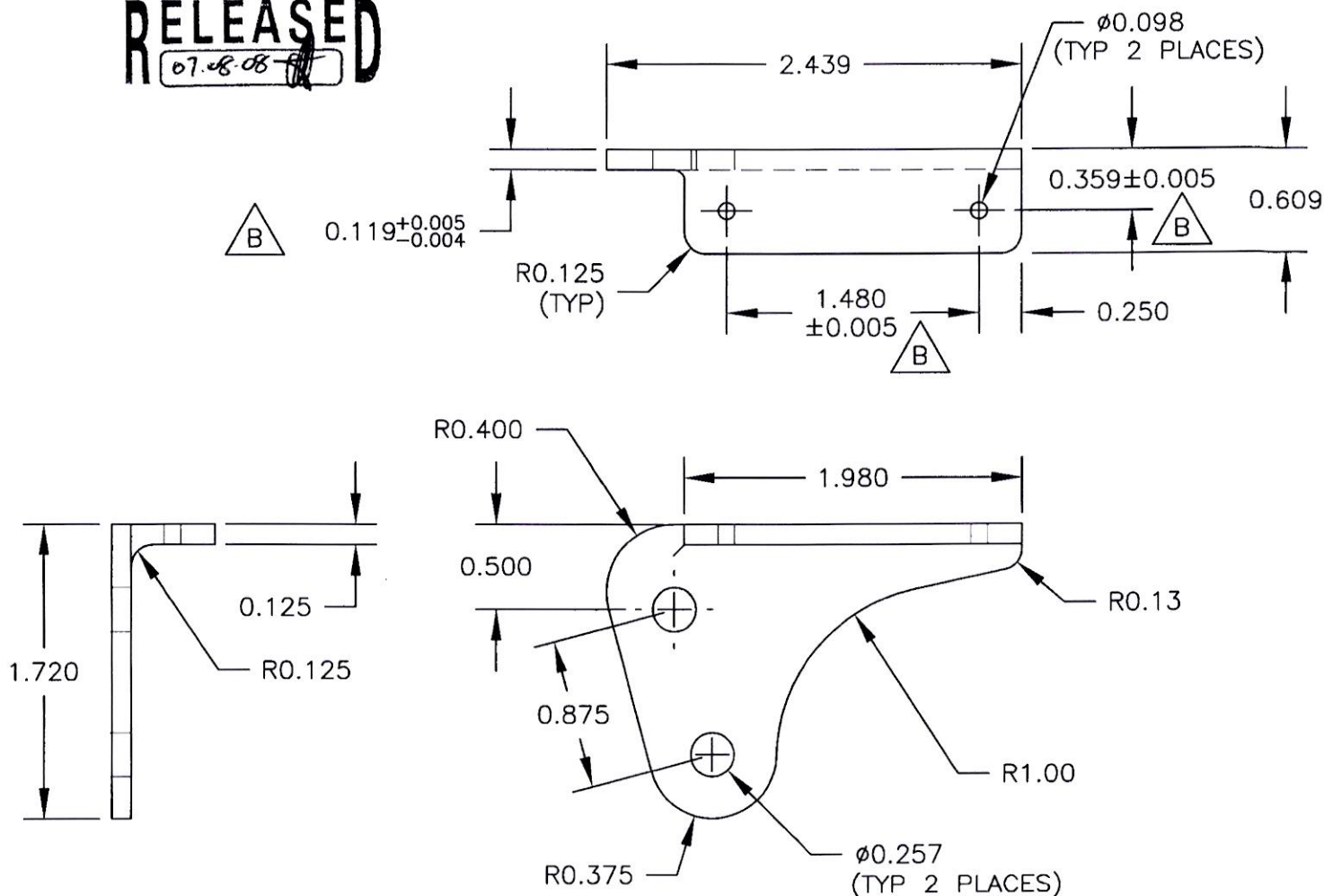
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CHECKED <i>js</i>	APPROVED <i>js</i>	DRAWING NO. D3278	REV. C SHEET 2 OF 3
DATE 07.07.24		TITLE SUPPORT ASSEMBLY	SCALE 1:1

RELEASED
07.08.08



D3278-1 SUPPORT (SHOWN)

D3278-2 SUPPORT (OPPOSITE)

- 1) MACHINE PER DWG FILE "D3278-1.SLDPRT"
- 2) MATERIAL: 6061-T6 (OR 6061-T651/T6510/T6511/T62) BAR
PER AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
PER AMS-QQ-A-200/8 (OR AMS 4160)
(REF. DART SPEC. M6061T6B)
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED

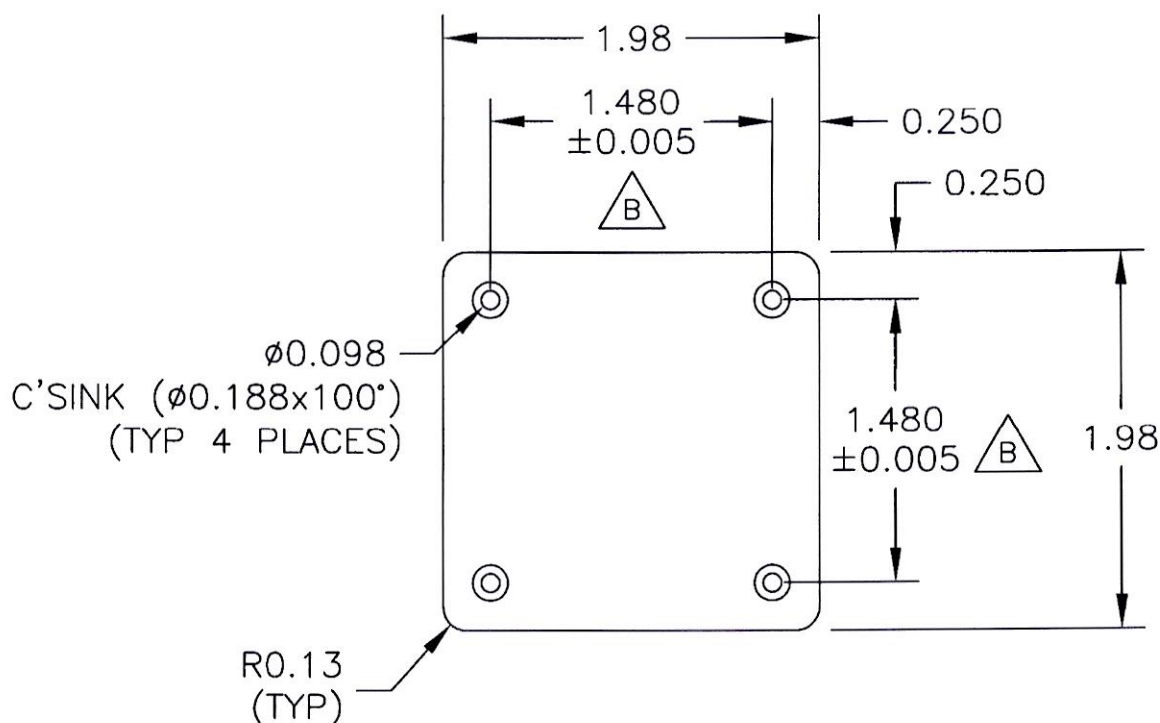
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DESIGN <i>qp</i>	DRAWN BY <i>BC</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>13</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D3278	REV. C SHEET 3 OF 3
DATE 07.07.24		TITLE SUPPORT ASSEMBLY	SCALE 1:1

RELEASED
07.08.08



D3278-3 SPACER

- 1) MATERIAL: DELRIN II 150E OR ACETRON GP ACETAL
(REF. DART SPEC. M-DELRIN-B0.125x2.000) OR
DELRIN II 150E OR ACETRON GP ACETAL
(REF. DART SPEC. M-DELRIN-S.125)
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED

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